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ABSTRACT

This is one of a series of units for environmental education developed by the Highline Public Schools. The emphasis of the 10 lessons in this unit is on energy, the earth's resources, and the use of earth resources, by man and other living things. The materials are designed for use at grade 1, but could be used in higher grades. Each lesson usually includes the concept of the lesson, materials needed, notes to the teacher, procedure, evaluative activities, and additional suggested activities. The materials were tried and evaluated; evaluation data may be obtained from the Highline Public Schools. (RH)

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MEANEY PAK

by Marie Meaney

An Environmental Learning Experience for 1st grade level. One of many "ELE PAKS" available for all areas.

Project ECOLogy, Title III, ESEA
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SE 021 445

NATURE KNOWS BEST

PROJECT ECOLOGY TITLE III

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Sheryl Bouton
Billy Brauer
Robin Bruner
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Darlene Anderson, White Center Elementary, Communication Skills
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Evaluation Results Regarding This ELE May Be Obtained by Including This Page and a Self Addressed Stamped Envelope To

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EVERYTHING IS CONNECTED TO EVERYTHING ELSE

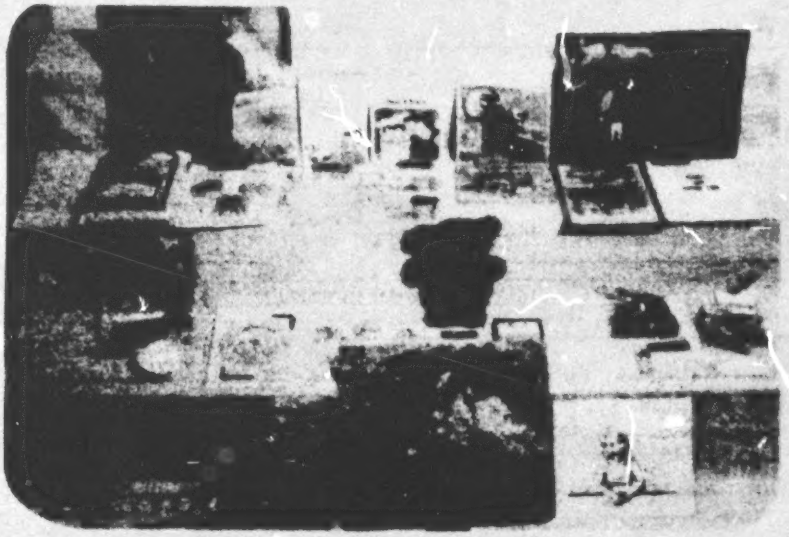
PROJECT ECOLOGY

EVERYTHING MUST GO SOMEWHERE

PROJECT ECOLOGY • TITLE III

THERE IS NO SUCH THING AS A FREE LUNCH

PROJECT ECOLOGY • TITLE III



Energy - Primary

by Marie Meaney

Lesson No.	Amt	Description	Source
1		Assorted pictures of appliances,	
		vehicles and large machinery	
3		"Good Morning, Mr. Sun"	HRS
		transparency of sun pattern	
4		Record/tape "I Love Trash"	
		Picture of Oscar in his garbage can	
		Comic strip of Big Bird and Oscar	
5		"Birds in Wintertime"	HRS
		Pictures of endangered species	
6		Picture of gardener grooming garden	
		assorted pictures of plants	
		"Plants that Provide Food"	
7		Planting soil	
		Seeds	

Lesson No.	Amt	Description	Source
7		picture of boy standing in rain	
8		Three Bear puppets	
		"Bambi" tape	
		O_2, CO_2 transparency	
9		Natural resources - coal, cotton, oil, wood,	
		sand, rubber, soil	
10		pictures of recreational activities	
		picture of children swimming	

CONCEPTS

1. What is energy?
2. Man needs energy to live and work.
3. The sun is the earth's basic source of energy.
4. Man needs to care for his earth.
5. Man needs to care for animals.
6. Man uses plants and needs to care for them.
7. Life on earth is dependent upon water.
8. Animals and plants are interdependent.
9. Man uses the earth's resources for his livelihood.
10. Man uses the earth's resources for enjoyment and recreation.

NOTES TO THE TEACHER

This ecology unit is designed to help the first grade child become aware of the many wonders of nature and to learn something about the energy and ecology problems of the present and future. It is the desire of the author that the child develop an appreciative attitude toward his earth; that he be motivated to love and care for it as humans do one for another.

As is always true in a teacher-child relationship, the teacher will serve as a model. She will demonstrate her own attitudes, especially when she is unaware that they are showing.

The lessons in this unit are of varied depth. The teacher will find that certain subject areas should just be touched upon because of their technicality. The cognitive abilities of first graders will many times prevent them from grasping a deeper probe into the subject, as in the case of the O_2, CO_2 cycle. It will most likely be the child's first exposure to this subject matter. In other areas, such as animal life and man's enjoyment of natural resources, the child will be familiar, and will want to contribute much. His willingness to respond and be a resource person should be encouraged and fully utilized.

The teacher should be flexible in these lessons, expanding them as the children show positive responses, and refraining from "forcing" where she feels certain methods and activities are not readily accepted by the children.

Each individual lesson does not need to be given all at once. Again the teacher must have a feeling as to how far her children can go. To push the lesson through in one sitting, for completion's sake, would obviously accomplish nothing.

The evaluative and creative activities coming from the children may be kept at school until the entire unit is completed. An interesting folder or notebook comprised of all their work would be a nice way to contain their creative efforts. This notebook would provide an interesting display for P.T.A. or open house. This notebook could also be a helpful reminder to the child's family of their responsibility to the care of our earth. In the Pak is a unique type of folder - one which utilizes newspapers. It is simple to make and provides in itself a lesson in resourcefulness and frugality.

It is important to display the work of every child in the room when work is exhibited. The child of low self-esteem is gratified when he sees his work displayed. It also promotes the sharing of children's ideas with each other - an important factor in the learning of inexperienced first graders.

The test included in this unit was designed to meet the specifications of the Title III requirements for this project. If the teacher does not care to test as she goes along, these tests may be used as activity sheets.

MASTER MATERIALS LIST

Lesson 1

energy chart
*assorted pictures of appliances, vehicles and large machinery
chart paper
felt pen

Lesson 2

assorted small appliances
magazines
scissors
paste

Lesson 3

*Field Enterprises picture book - Good Morning, Mr. Sun
hole punch
colored yarn
*transparency of sun pattern
*transparency pencil
overhead projector
butcher paper approximately 18" x 18"
tempera paints, orange and yellow
stapler
paste
newspapers
*sun spelling ditto
*sun coloring ditto

Lesson 4

*Sesame Street record "I Love Trash"
*picture of Oscar in his garbage can
*Sesame Street comic strip of Big Bird and Oscar
typewriter
typing paper
earthkeeping medal

Lesson 5

*book - Birds In Wintertime
classroom animal
*pictures of endangered species
Bowmar picture of boy loving dog
tape recorder

Lesson 6

bouquet of fresh flowers or house plant
fresh vegetable
*picture of gardener grooming garden
*assorted pictures of plants
*The Child's World pack "Plants That Provide Food"

Lesson 7

walnut or egg shells
planting soil
seeds
gummed labels
*Sesame Street comic strip (plant needing water)
*Bowmar picture - boy standing in rain
*picture of animals at water hole

Lesson 8

Three Bear puppets
*"Bambi" tape by Disney
tape recorder
*O_2, CO_2 transparency
transparency pencil
overhead projector
*O_2, CO_2 ditto

Lesson 9

*natural resources
*The Child's World pack

Lesson 10

*pictures of recreational activities
*picture of children swimming
tape recorder

The heavens belong to the Lord, but he has given the earth to all mankind.

O Lord, what a variety you have made! And in wisdom you have made them all! The earth is full of your riches.

He covers the heavens with clouds, sends down the showers and makes the green grass grow in mountain pastures. He feeds the wild animals and the young ravens cry to him for food.

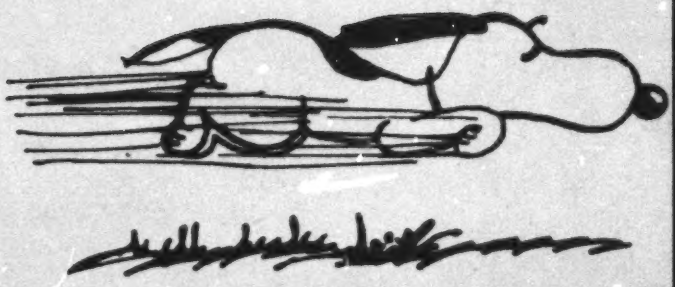
He formed the mountains by his mighty strength. He quiets the raging oceans and all the world's clamor. In the farthest corners of the earth the glorious acts of God shall startle everyone. The dawn and sunset shout for joy! He waters the earth to make it fertile. The rivers of God will not run dry! He prepares the earth for his people and sends them rich harvest of grain. He waters the furrows with abundant rain. Showers soften the earth, melting the clods and causing seeds to sprout across the lands. Then he crowns it all with green, lush pastures in the wilderness; hillsides blossom with joy. The pastures are filled with flocks of sheep, and the valleys are carpeted with grain. All the world shouts with joy and sings.

Living Psalms

LESSON 1

CONCEPT: What is energy?

MATERIALS:
1. energy chart
2. assorted pictures of appliances, vehicles and large machinery
3. chart paper
4. felt pen



PROCEDURE:

1. Take the children to the playground to run races in order to demonstrate the energy within their own bodies.

2. Bring them together on the rug to discuss energy and read the chart.

   Have a child read the energy story, pointing to each word so that the entire group can follow along. Then have the group read it together.

   Ask someone to circle all the words that say energy. Count how many times it is written on the chart.

   The chart could say "Energy is what it takes to get work done. People use energy to do work. Machines use energy to do work. It takes energy to make light. It takes energy to make heat. It takes energy to make things go."

3. Ask questions and show pictures to further define the term energy.

   What gave you energy to run your races?
   What kind of energy is required to make these cars and trucks run?
   What kind of energy makes this machinery work?
   What kind of energy makes the appliances in your home work?

4. Take a walk around the neighborhood, looking for things that consume energy. Ask the children to remember what they saw and what kind of energy they thought was used, so that it can be written down on a chart when they return.

   (The following words were given by a first grade class, as a definition of energy).

   electricity, gasoline, magnetism, muscles, brains, sun, fire, oil, coal, water, natural gas, wind

EVALUATIVE ACTIVITY:

Have the children tell what they saw on the walk that consumed energy and what kind of energy it was. Ask them to construct short simple sentences so that the chart can be easily read by all.

SUGGESTED ADDITIONAL ACTIVITIES:

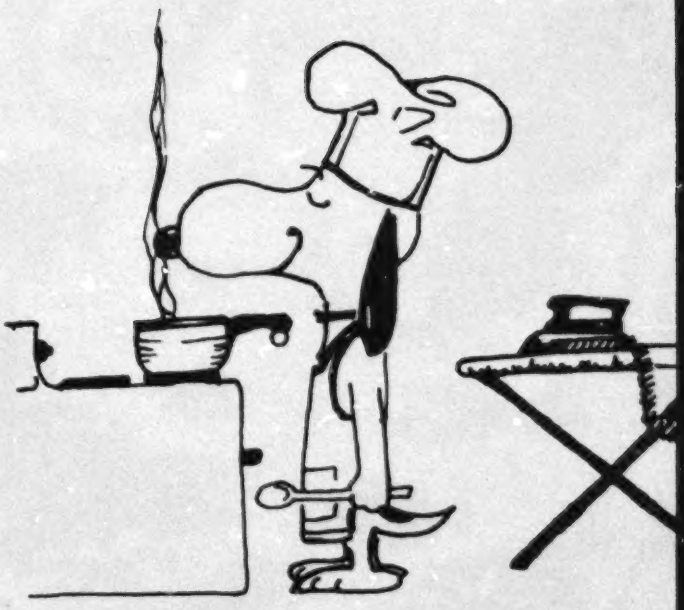
1. Write to Seattle City Light asking for information as to how Washington state gets it's electricity.

2. Look up in the World Book, the names of people who have invented devices that consume energy, i.e. Thomas Edison, Eli Whitney, Werner Von Braun, Benjamin Franklin, Henry Ford

3. Talk about ways to save energy. Write to the local electric utility company requesting the Snoopy chart on saving energy.

4. Select helpers each week to be in charge of saving energy in the room. Their job would be to make sure lights are turned off when the roon is vacant or the sun is shining brightly. They can also pull the shades on cold days, keep the doors shut and check the thermostat.

LESSON 2



CONCEPT: Man needs energy to live and work.

MATERIALS:
1. assorted small appliances i.e. iron, blender, mixer, etc.
2. magazines
3. scissors
4. paste

PROCEDURE:
1. Ask the children to close their eyes and picture their kitchen in their minds. Ask them if they can picture any energy consuming devices there. They may open their eyes and tell the whole group. Tell how the device helps the family.

2. Ask questions about the appliances so as to show how energy helps man.

   What kind of energy is needed to make these appliances work?

   Did people in the olden days have these?

   Why not?

   What other devices in your home use energy?

EVALUATIVE ACTIVITY:
1. The children may cut pictures from magazines of those devices that consume energy within and out of the home. Paste the pictures on the energy charts.

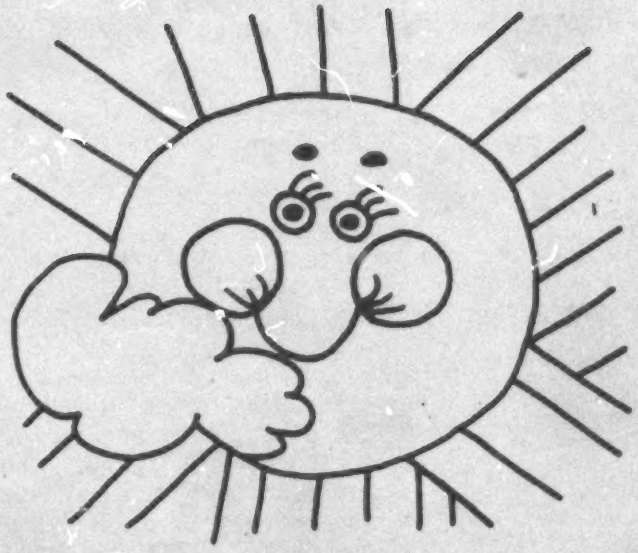
SUGGESTED ADDITIONAL ACTIVITIES:
1. Have the children make a list of all the energy consuming devices in their home. Bring it back to class, read it to the class, then attach it to the energy chart for all to read.

2. Ask some resource people to come in and speak to the children about energy and their jobs, i.e. mechanic, electrician, custodian, etc.

3. Watch the film Your Sleep and Rest (a film about body energy and how it is restored daily)

LESSON 3

CONCEPT: The sun is the earth's basic source of energy.



MATERIALS:
1. picture of child lying in the sand at the beach on a sunny day (Field Enterprises #2)
2. book - Good Morning, Mr. Sun
3. butcher paper, approximately 18" x 18"
4. tempera paints, yellow and orange
5. stapler
6. paste
7. newspapers
8. sun spelling ditto
9. sun coloring ditto
10. hole punch
11. colored yarn
12. transparency of sun pattern
13. transparency pencil
14. overhead projector

PROCEDURE:

1. Gather the children closely on the floor to facilitate inquiry and discussion. Hold up the picture of the child on the beach. Ask questions such as:

   How many of you went to the beach this summer like this little girl?
   How do you think this warm sand makes her feel?
   When you are out in the sun, how does it make you feel?

   After the children have expressed their feelings about the sun as related to themselves, inquire as to the more functional purposes of the sun, with questions such as:

   What does the sun do for us on our earth?
   What would it be like if there was no sun?
   How does the sun help the farmer?
   Is the sun a friend?
   How does the sun help the astronauts in the Skylab?

2. Read the story Good Morning, Mr. Sun.

3. While the children are still gathered in a group, project the transparency of the sun. Ask the children to tell you some words to write in the sun that tell us how it helps man, i.e. It helps plants grow. It makes us warm. It gives us light, etc.

SUGGESTED ADDITIONAL ACTIVITIES:

1. To observe the effects of sunlight upon plant growth, experiment with two identical plants by placing one in a sunny place and the other in a closet. Check it every few days until some conclusion can be reached concerning its growth.

2. Place a piece of wood on the grass for about 5 days. Lift it up and see what has happened to the grass when the sun can't reach it.

3. To observe the effects of the warmth of sunlight upon evaporation, fill two transparent glasses with equal amounts of water. With felt pen, mark the date of the beginning of the experiment. Place one glass in a warm sunny spot. Place the other glass in a cooler shaded area. Every few days compare and mark each glass until a definite statement can be made concerning the effects of heat upon evaporation.

4. Read these books about the sun: Our Friend, The Sun by John Polgreen; The Sun is a Star by Sune Engelbretson; and The Day the Sun Danced by Edith Hurd. A more advanced reader may like to read one of the books to another individual, a small group or the entire class.

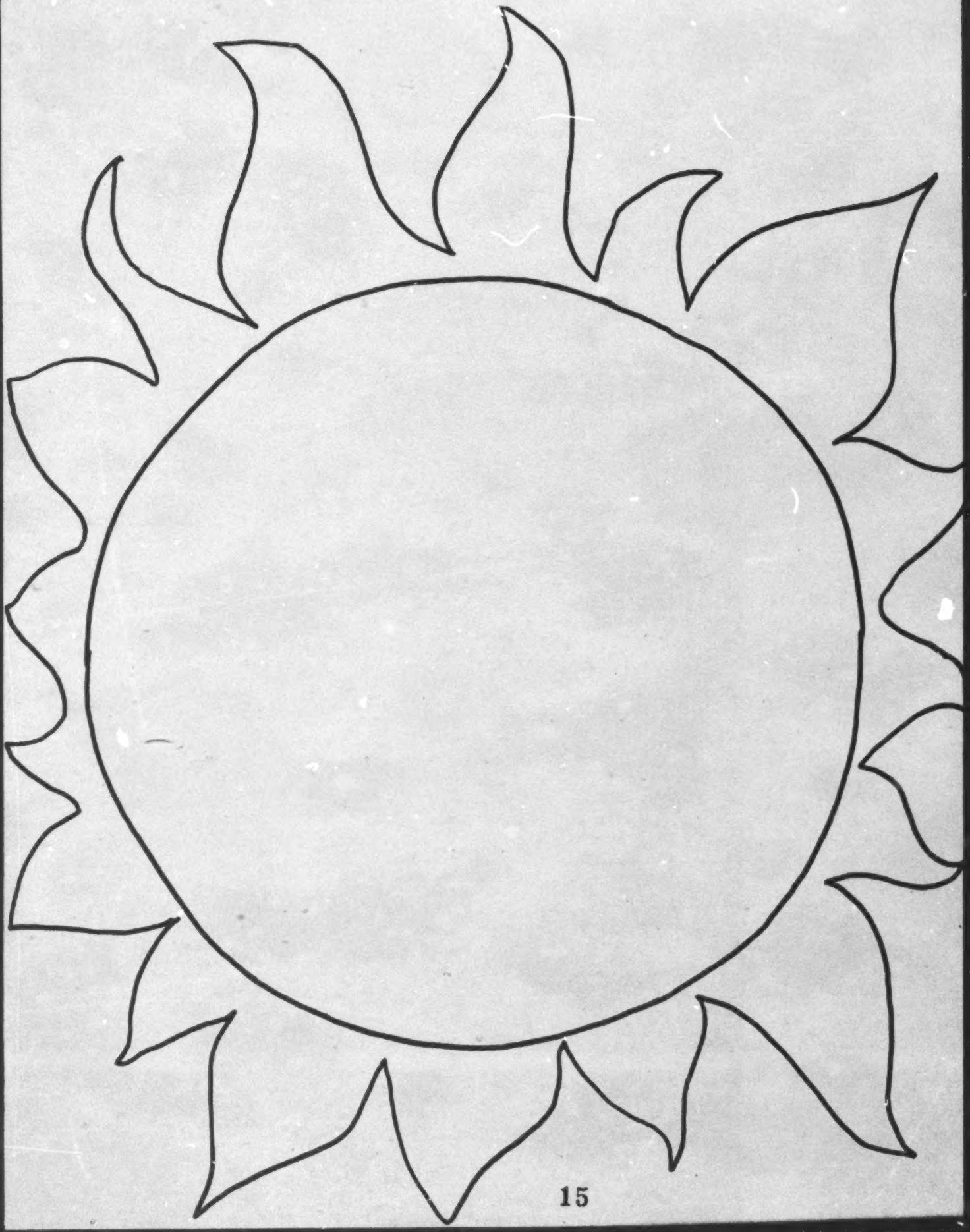
5. Play a riddle game: Who Am I?
   I am large.
   I am bright.
   I live in the sky.
   I shine every day.
   I warm the Earth.
   I make days warm for you to play outside.

6. Watch the film: A Time for Sun

7. Write some poetry about the sun on large chart paper for the children to read. The poetry may also be dittoed for the children to read and illustrate. This can become part of the unit's folder.

8. Practice spelling the word "sun" on the ditto.

9. Color in the different positions of the sun on the ditto.



Sun on the Clover

There's sun on the clover
    And sun on the log,
Sun on the fish pond
    And sun on the frog.
Sun on the honeybee,
    Sun on the crows
Sun on the wash line
    To dry the clean clothes.

Louise Fabrice Handcock

The Sun

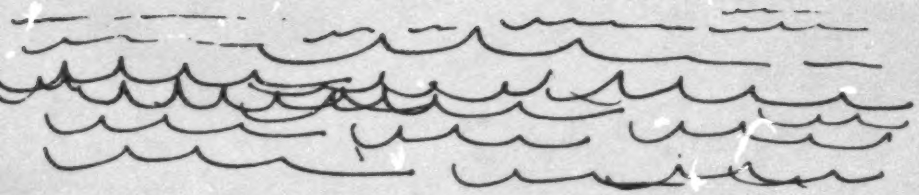
I told the Sun that I was glad,
    I'm sure I don't know why;
Somehow the pleasant way he had
    Of shining in the sky,
Just put a notion in my head
    That wouldn't it be fun
If, walking on the hill, I said
    "I'm happy" to the Sun.

John Drinkwater

The Light Is Sweet

Truly the light is sweet
And a pleasant thing it is
For the eyes to behold the sun.

The Bible



Draw the sun at sunrise.

Draw the sun at noon.

Draw the sun at sunset.

Draw the sun on a rainy day.

Trace over the words.

sun sun

Fill in the missing letters.

su_ s_n

_un _u_

Write the word 2 times by yourself.

LESSON 4

CONCEPT: Man needs to care for his earth.

MATERIALS:
1. Sesame Street record "I Love Trash"
2. picture of Oscar in his garbage can
3. Sesame Street comic strip of Big Bird and Oscar
4. typewriter - paper
5. earthkeeping medal

PROCEDURE:
1. Gather in a group to listen to Oscar sing his song about trash. Hold up the picture of Oscar while the children are listening.

2. Have a child read the Sesame Street comic strip to the class. Ask the children what kind of trash Oscar likes. Ask the children about keeping our community neat.

   Does Oscar help Sesame Street look nice?
   What would make Sesame Street look better?
   What can people do to help keep the world nice?
   What could we do at school to keep it looking nice?
   What could you do in your neighborhood to make it a nice place in which to live?
   When you go on a picnic or camping what could you do to make sure the park or campgrounds stay as nice as they were before you visited them?
   What would you do if they were messy when you got there?

3. Set up a schedule where 2 to 4 children go around the school yard once a week or so at lunch recess to pick up trash. If it is collected in a mesh type bag the whole class can see the trash that was accumulated. Weighing the trash every week and keeping a record of it makes a good math lesson. Each child participating should receive his "earthkeeping" medal. (instructions at end of this lesson)

EVALUATIVE ACTIVITY: The children may dictate a creative story about how everyone can help keep the earth nice. (Typing these stories is much quicker than writing them by hand. If the teacher does not type efficiently, a parent could come in to help with this activity.)

The child may then illustrate his story. These stories may be put together in a corporate book entitled "Earthkeeping", "Keeping Our World Beautiful", or whatever ideas for titles would come forth from the children.

This book may serve as a reader for those more capable readers. Each child's story may be shared with the entire class after they are completed.

In the following week or so the children may report back to the class as to how they helped with the "earthkeeping" and receive a special medal for their efforts.

SUGGESTED ADDITIONAL ACTIVITIES:

1. Make a poster showing how to keep the earth nice. These posters can be hung around the school in the hallways, office or lunchroom.

2. Take a walk around the schoolyard and see what needs fixing or cleaning.

3. Distribute Woodsy Owl stickers and brochures. Encourage the children to write to the Forest Service to secure information about conservation of natural resources.

   Send to: Woodsy Owl
   U. S. Dept. of Agriculture
   Washington, D.C. 20250

4. Make a litterbag for the car out of a brown paper bag, decorating it with art materials, and attaching a handle of yarn.

5. Read and listen to the Smokey The Bear book and record. (order from Virginia Spraines, ERAC) Smokey The Bear puppet and doll are also available.

6. Watch the films Trouble With Trash and Litterbug

7. Read the books: In the Woods, In the Meadow, In the Sky by Aileen Fisher and Lookout For The Forests: A Conservation Story by Glenn O. Blough.

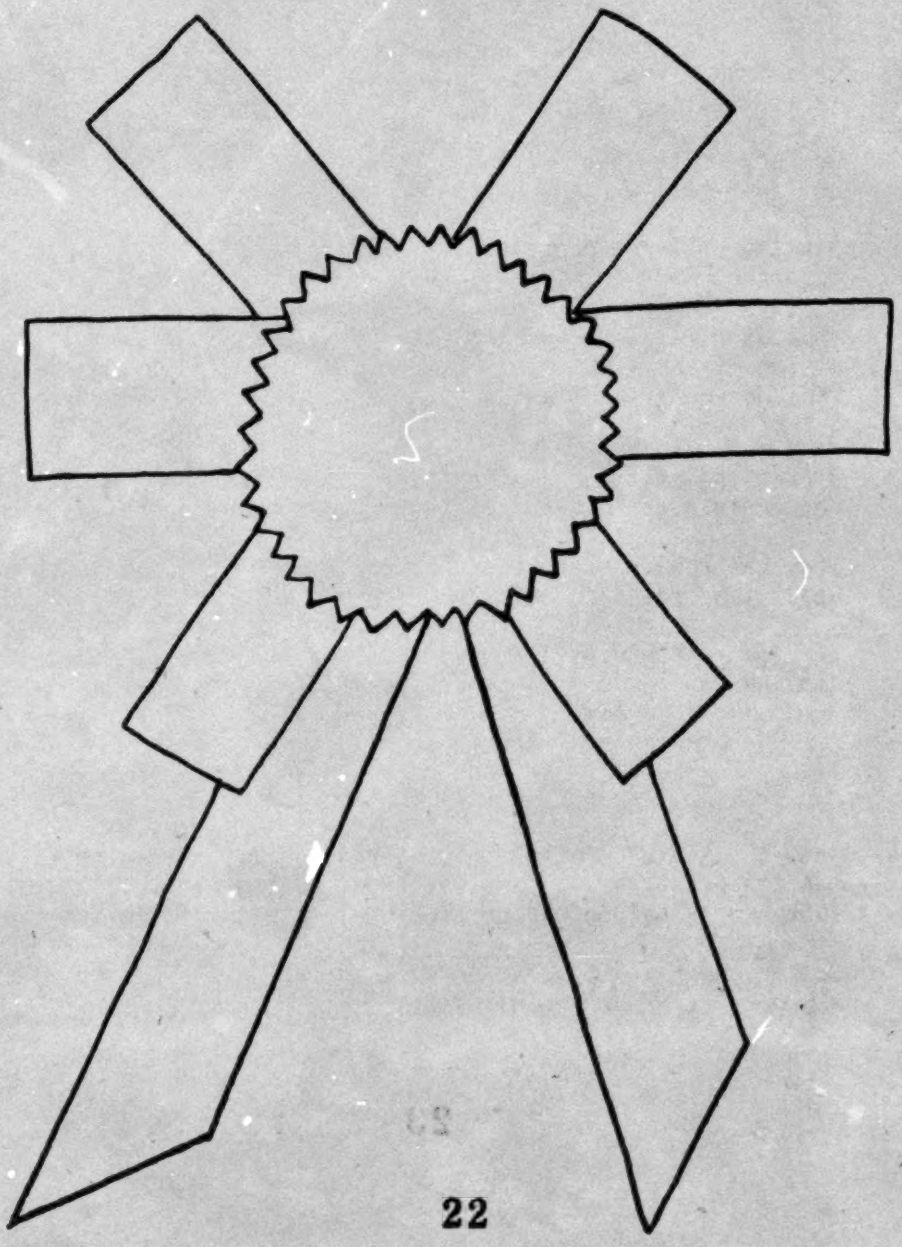
8. Sing the song "Picture A World", pg. 90; "I Love Trash", pg. 95; and "The Garden", pg. 116 in the Sesame Street Song Book.

9. Send away for free booklet about litter, Let's Make America Beautiful Again.

   Litter Control
   State of Washington
   Dept. of Ecology
   Olympia, WA 98504

Instructions for Earthkeeping Medal
(see sample in kit)

1. Cut 3 paper or ribbon strips, 1" x 10".
2. Fold each strip in thirds.
3. Staple the strips in the middle to form a "flower".
4. Cut 2 strips 1" x 6". Staple together at top.
5. Attach the "flower" to the 2 strips.
6. With pinking shears cut a 2" circle out of gold foil paper. Paste it on to cover the staple.



LESSON 5

CONCEPT: Man needs to care for animals.

MATERIALS:
1. book - Birds in Wintertime
2. classroom animal
3. pictures of endangered species
4. Bowmar picture - boy loving dog
5. tape recorder

PROCEDURE:

1. Gather children together to look at the book, Birds in Wintertime. Tell them to quietly watch while you turn the pages of the book. In their minds they will tell themselves the story.

   Go back to the beginning of the book. This time let different children tell what is happening on each page.

2. Ask the children questions so as to determine how people should care for birds in winter.

   What is the boy bringing to the birds?
   Why can't they find their own food?
   What do you think might happen to the birds if the boy didn't help them?

3. Direct the children's attention to the classroom animal. Have a responsible child demonstrate how to handle the animal.

   Show the Bowmar picture of the boy kissing the dog. Ask questions about tenderness to animals.

   Are you gentle with animals like this boy is with his dog?
   Show us the tender loving way to hold our pet so that he will know we love him.
   Tell us some things that we shouldn't do so that we will not hurt our pet.
   Can we show care for animals like the boy did with the birds?

4. Show the pictures of the endangered species. Inquire as to how man can preserve and care for them. Using pictures of animals such as the bald eagle or blue whale ask the following questions:

   Can anyone tell us about these animals?
   Why are they near extinction?
   How do we help them from becoming extinct?

EVALUATIVE ACTIVITY:

Instruct the children to take turns taping their own story of how they treat animals, how they are kind to their pets and/or how they have helped animals that were in trouble.

At a later time the class can hear the completed tape with every story a surprise, even to the teacher. This taping by the children requires a lesson of its own as to how the machine is operated, how to tape in succession, without erasing someone else's story, etc. This taping lesson should be separate from the ecology lesson as it will require much time.

SUGGESTED ADDITIONAL ACTIVITIES:

1. Have a veterinary doctor come in the classroom to tell how he cares for animals and how one may become an animal doctor.

2. Select a special day for "pet day" where the children may bring their pets to school to share with the class. At that time they may share with the class how they care for them.

3. Take a trip to the zoo, aquarium, farm, or vet's office.

4. Look at S.V.E. animal pictures, mix up the different kinds and then classify them accordingly, i.e. farm animals, zoo animals, birds, reptiles and amphibians, pets, etc.

5. At a sharing time have the children demonstrate how they correctly pick up their pet, hold it, and stroke it. This could be on the same day as "pet day".

6. Watch the films: Turtle - Care of a Pet, Clean and Bright and Animal School.

7. Draw pictures from the book Ed Emberley's Drawing Book of Animals by Ed Emberley.

8. Read the books: Kindness to Animals, Africa's Animals, Wildlife for Tomorrow by the U. S. Forest Service, Here Comes Jimmy! Here Comes Jimmy's Dog, Be Nice to Spiders, and A Day With My Pets.

9. Read the poem "Kindness to Animals"

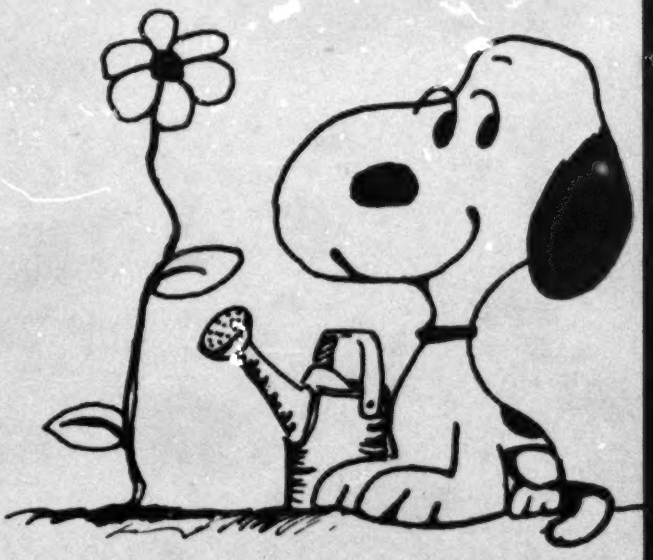
Kindness to Animals

Little children, never give
Pain to things that feel and live;
Let the gentle robin come
For the crumbs you save at home, -
As his meat you throw along
He'll repay you with a song;

Never hurt the timid hare
Keeping from her green grass lair,
Let her come and sport and play
On the lawn at close of day;
The little lark goes soaring high
To the bright windows of the sky,
Singing as if 'twere always spring,
And flittering on an untired wing, -
Oh let him sing his happy song,
Nor do these gentle creatures wrong.

10. The class could develop a "Pet Book" by writing stories about their own pets and illustrating them.

LESSON 6



CONCEPT: Man uses plants and needs to care for them.

MATERIALS:
1. bouquet of fresh flowers (preferably fragrant) house plant, single live flower or whatever is available
2. fresh vegetable such as a potato
3. picture of gardener grooming the garden
4. assorted pictures of plants being used in different ways i.e. flower arrangement, landscaping, camping in woods, people sitting in shade of tree, prepared food on dinner table
5. The Child World's Pack, "Plants That Provide Food" (use for Lesson 9 also)

PROCEDURE:
1. Gather the children in a small group and ask them questions concerning the flowers, trying to bring out an aesthetic appreciation for plant life.

   How do these flowers make you feel?
   What do you think of when you smell them?
   Do flowers like this help people on the earth?
   Where do you see people using plants to make the surroundings prettier?

   Ask questions concerning the vegetable, emphasizing the functional value of plants on the earth.

   How do people use this kind of plant?
   What do we call plants that are edible?
   What kinds of plants have you grown at your house? Are they decorative like the flowers or edible like the potato?
   What can we do to help plants to be healthy and beautiful?
   What happened to Bambi's forest home? Was it beautiful after the fire? Did the animals still have their homes after the fire?

2. Play a game with the assorted pictures. Hold up the picture and have the children tell what kind of plant it is and how people use it.

EVALUATIVE ACTIVITY:

1. Ask the children to report to the group at sharing time as to how they saw people caring for plants. Did they see anyone abusing them?

2. Make a chart telling how to care for plants on one side and what not to do on the other, such as:

WHAT WE CAN DO TO HELP PLANTS	WHAT WE SHOULD NOT DO TO PLANTS
1. Keep them trimmed.	1. Do not walk through them.
2. Spray them if they need it.	2. Do not tear off branches and leaves.
etc.	

SUGGESTED ADDITIONAL ACTIVITIES:

1. Read some books about plants: Plants That Feed the World, A Fruit is Born, Bits that Grow Big: Where Plants Come From.

2. Have a child's parent who has a garden come in and tell how they plan it, plant it, and care for it.

3. Make a list of jobs that require the handling of plants, i.e. florist, landscaper, nursery person, lumberjack, farmer, forest ranger, botanist, nutritionist, hiker, etc.

4. Ask the local florist or nurseryman to come and tell about their job. They could tell how people use flowers to make them feel better and beautify their environment.

5. See some films about plants: What Plants Need For Growth, Life Story of a Plant, I Like Trees.

6. Read some poems about plants:

CROCUSES

The sunrise tints the dew;
The yellow crocuses are out
And I must pick a few.

Jōsa

THE FALL OF THE PLUM BLOSSOMS

I came to look, and lo!
The plum tree petals scatter down,
A fall of purest snow.

Rankō

WHAT DO WE PLANT?

What do we plant when we plant the tree?
We plant the ship, which will cross the sea.
We plant the mast to carry the sails;
We plant the planks to withstand the gales -
The keel, the keelson, and beam and knee;
We plant the ship when we plant the tree.

What do we plant when we plant the tree?
We plant the houses for you and me.
We plant the rafter, the shingles, the floors,
We plant the studding, the lath, the doors,
The beams and siding, all parts that be;
We plant the house when we plant the tree.

What do we plant when we plant the tree?
A thousand things that we daily see;
We plant the spire that out-towers the crag,
We plant the staff for our country's flag
We plant the shade, from the hot sun free;
We plant all these when we plant the tree.

Henry Abbey

7. Read The Child's World pack, "Plants That Provide Food", to see how necessary plantlife is for people.

LESSON 7

CONCEPT: Life on earth is dependent upon water.

MATERIALS:
1. planting container such as milk or cottage cheese carton
2. planting soil
3. seeds
4. Sesame Street comic strip - (plant needing water)
5. Bowmar picture - boy standing in rain
6. picture of animals at water hole

PROCEDURE:

1. Hold up Sesame Street comic strip and ask a child to tell about it and read it, if he can. Ask questions about the dependency of plants upon water.

   How does the flower look as the day gets hotter?
   Why is it wilting?
   What makes it look better again?
   What would happen to the flower if the rain didn't come?

2. The children may then gather around a table to plant their seeds. Each child should be given a labeled planter containing some seeds and soil. The children may follow the teacher's steps in planting the seeds and then watering them.

   One of the plants should be labeled "NO WATER" and then be put on a shelf or table so that it is easily observable by the children. The children's plants should be kept in an easily accessable place so that the children may water them every day. The "NO WATER" plant may serve as an experimental activity and should be observed along with the other plants.

3. After the children have cleaned up and put their plants away, they may be gathered in a group again. Holding up the picture of animals at a watering hole, ask questions such as:

   Why are the animals gathered around the same spot?
   What would happen if the water hole dried up?
   Do people need water like animals?
   Where will our plants get their water from?

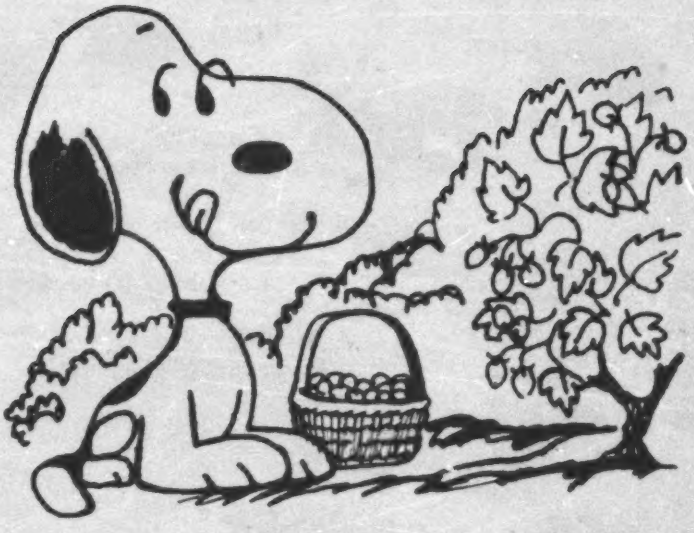
   Show the picture of the boy standing in the rain. Ask questions concerning the sources of water.

   Where does the water come from that is falling on the boy?
   Where does the water come from which the animals were drinking?
   Where does the water come from that we drink?
   Where do farmers get all the water they need for their crops?

EVALUATIVE ACTIVITY:

1. Read the book Water, Where It Comes From And Where It Goes, a Random House Pop-up book and Fresh Water by Delwyn Davies
2. Watch the filmstrip, Wonder of Water.
3. Write a creative story or dictate a story to the teacher to type about what different things people use water for.
4. The children may make a list containing the many ways they have observed water being used in their communities and homes. This may be shared with the class at a specified time.
5. On a rainy day, put out a dish to collect the rain, to drink or water plants with.
6. Make a list of things that people use water for.
7. Read the short story "How Does Your Garden Grow?"
8. Watch the films: A Time for Rain, Water: A First Film, I Like Water, Water, Fountain of Life.
9. Use the science kit "Water."
10. Sing the song "Rain Falls", pg. 102, in the Sesame Street Song Book

LESSON 8



CONCEPT: Animals and plants are interdependent.

MATERIALS:
1. Three Bears puppets
2. "Bambi tape
3. tape recorder
4. O_2, CO_2 transparency
5. transparency pencil
6. overhead projector
7. O_2, CO_2 ditto

PROCEDURE: Before Lesson - A day or so before this lesson, listen to Disney's "Bambi" record or tape, emphasizing in evaluation that the forest home of the animals was destroyed by fire.

1. Tape the following session for a later activity.

   Begin inquiry into the dependency of animals upon plants by holding up the Bambi book or record picture and asking questions such as:

   Do you remember what happened to Bambi and Thumper and Flower's forest home?
   Where do you think they lived after the fire?
   How can you be careful in the woods when you go camping and hiking so that you don't start a fire?

   Hold up the bag with the 3 bears inside and say:

   Inside this bag I have 3 forest friends that you all know.

   Take the bears out and briefly let the children tell about them so as to become better acquainted. Ask questions about the dependency of the bears upon plants with the following questions:

   Do the 3 bears need plants in order to live?
   Where do real bears live?
   What do real bears eat?
   Do other animals need plants too?
   Do people need plants?
   What plants do we build our houses out of?
   What foods do we eat that are plants?

2. Draw the children's attention to the transparency of the O_2, CO_2 cycle. Tell them there is another way that people and animals need plants. And, that the plants need the people and animals in the same way. Have the children inhale deeply. Ask them:

What did you breathe into your lungs?
Could you see it?
What would happen to us if all the air was gone from this room?
What does the air have in it that we need?

Have the children exhale and ask the same questions.
Point out to the children on the transparency that the plant also "breathes" in and out except that the cycle is reversed. Draw a circle with arrows showing how the cycle continues around.

EVALUATIVE ACTIVITY:

After the children have returned to their desks, give them the O_2, CO_2 ditto. They will draw the cycle and pictures of their own on the plant and animal side.

Each child's paper should be displayed in the room before he takes it home to share with his family. The children should be encouraged to explain to their family how plants give animals oxygen and animals give plants carbon dioxide.

SUGGESTED ADDITIONAL ACTIVITIES:

1. Make a simple terrarium in a jar.

2. Listen to the tape of the lesson.

3. The children may write about animal-plant interdependency in three different ways depending upon their capabilities:

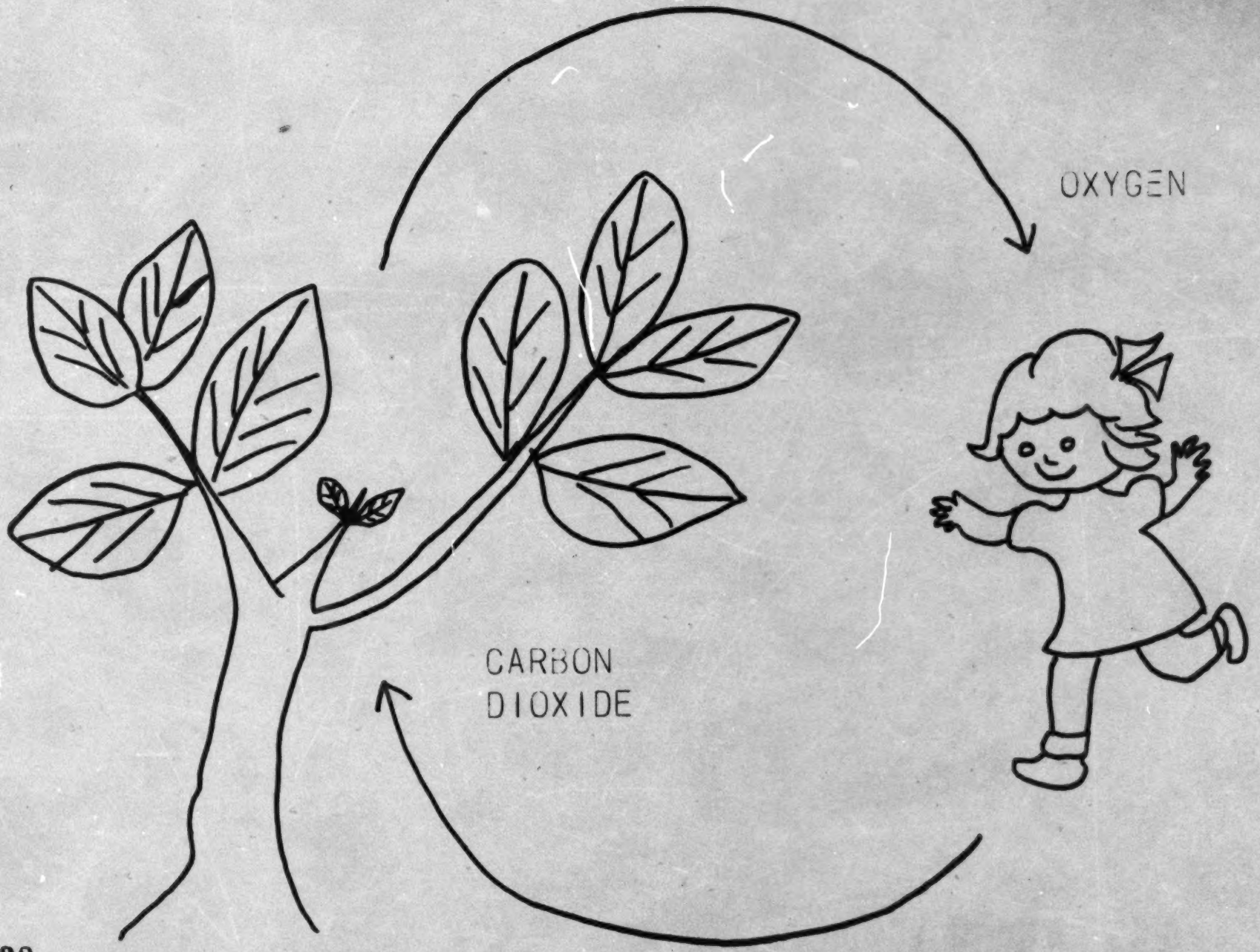
    a. Copy a story from the chalkboard.
    b. Write a creative story.
    c. Dictate a story for the teacher to type.

    These stories could be compiled into one book entitled "Plants and Animals Need Each Other" or a similar title.

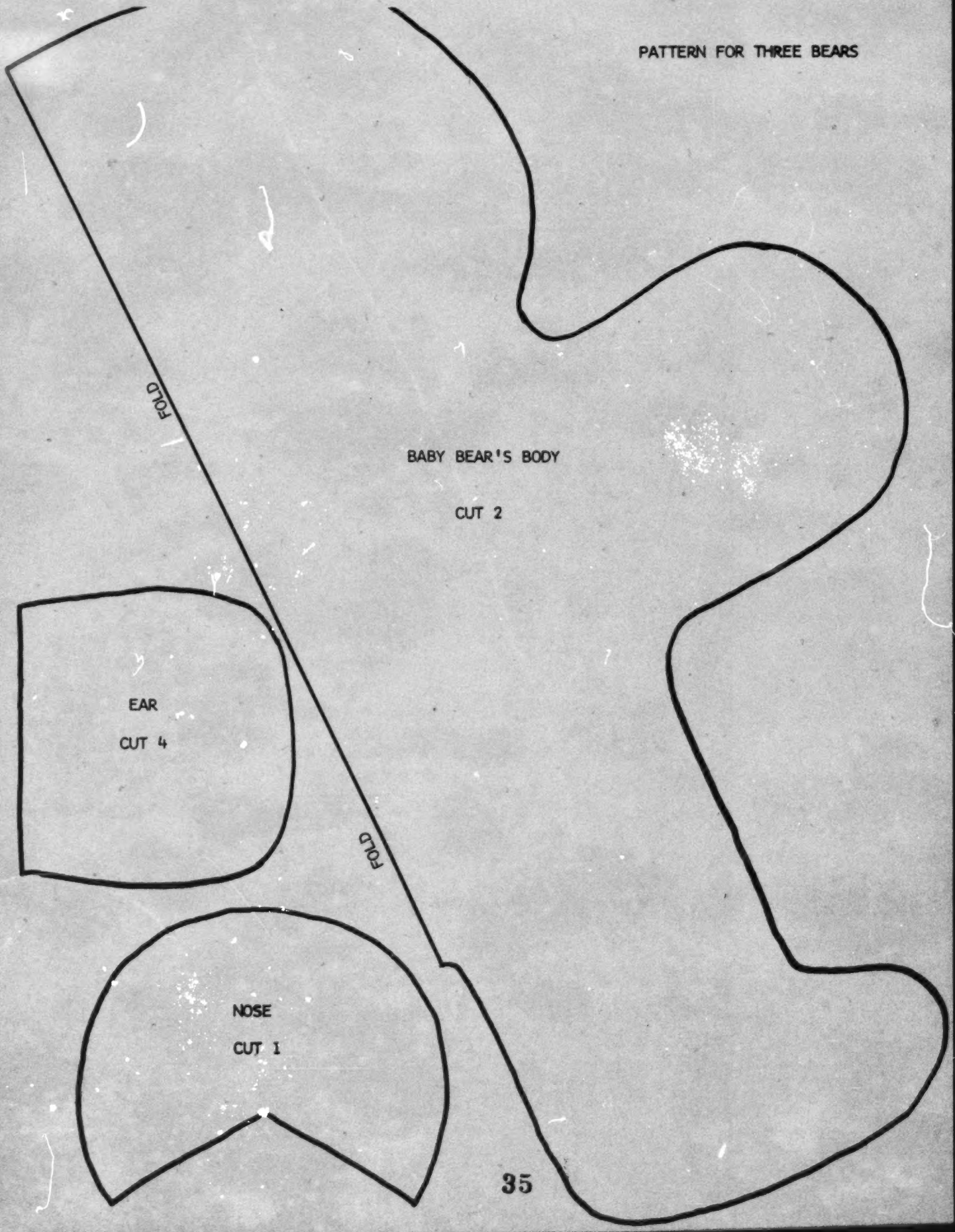
4. Watch the film Water Fountain of Life.

5. Read the books: Billy in the Woods by Alain Gree and Nature's Network by Keith Reid.

6. Watch the filmstrip Bambi.


OXYGEN
CARBON
DIOXIDE

PATTERN FOR THREE BEARS



To make the three bears in different sizes, extend the cutting edge by about ½" for the mother bear and 1" for the father bear.

Make the body out of fake fur. Cut 2 bodies, 4 ears, and 1 nose. The front of the ears may be faced with a contrasting color. The nose is stitched together on the straight lines, pinned on the face and stuffed with a little dacron to make it stand out. A black button makes a good nose. Plastic puppet eyes may be purchased at any craft store. A small red felt tongue may be placed under the nose.

A bit of clothing on each bear makes it more attractive and interesting. Baby bear could have a bib; mother, an apron; and father, a tie.

Dacron is a very good stuffing. It is much easier to stuff with than foam.

LESSON 9

CONCEPT: Man uses the earth's resources for his livelihood.

MATERIALS:
1. natural resources:
   - coal
   - cotton
   - oil
   - sand
   - wood
   - water
   - salt
   - rubber
   - vegetable
   - soil
2. The Child's World pack "Plants That Provide Food" (use for lesson 6 also)

PROCEDURE:
1. Gather the children together in a group, with a table nearby. Have the set of natural elements together in a box. Hold up each item one by one. Ask what it is and where it comes from.

   Pass each item around as it is discussed. Having two or three of each resource will facilitate everyone seeing and handling it more quickly.

   After each child has observed and handled the elements, place them on the table. Ask certain children to make labels for each element. They may copy the words off the board which the teacher writes for them.

2. Holding up each different element one at a time, ask the children questions concerning the type job that is connected with the resource. The following general questions may be used:

   Who takes this resource from the earth for us?
   Do the people who make these resources usable need to be trained in any special way?
   Could we do the job that they do without learning about it first?
   Are there any places around us that produce these resources?
   Have you ever been on a trip and seen factories or farms or mines where these resources are produced, refined or developed?
   What would you need to do if you wanted to have one of these jobs?

3. Place The Child's World pack out where all the pictures may be observed. Ask questions about how we get our food from the earth.

Where does our food come from?
Who grows it?
Who brings it to the market?
Have you ever had a garden at your own house?
Could man live long without soil in which to grow food?

EVALUATIVE ACTIVITY:

Play a word association type game where the teacher says a word that is a natural resource and the children respond with what man uses it for, i.e.:

Teacher	Children
cotton	dresses shirts bandages
wood	houses toothpicks furniture
rubber	tires balls boots
water	ice cubes electricity drinks

etc.

SUGGESTED ADDITIONAL ACTIVITIES:

1. The children may use the Child's World pack for a game where one of them reads the front and the other child has to give the correct response. After giving the response, they may open the chart to check if it is correct. This also serves as a reading activity.

2. The children may look through magazines or books to find pictures of objects that man has produced out of natural resources. They may share this during a specified time for this activity.

3. Read and listen to the book and record Old MacDonald Had a Farm (available from Virginia Spraines, ERAC)

4. Take a field trip to Camp Waskowitz on Wednesday so that you can visit the Weyerhauser Mill.

5. Investigate major sources of coal, cotton, lumber, and oil in the world

6. Make a chart with the natural resource on one side and the types of jobs connected with that resource.

7. Read the books: How Things We Use Are Made, True Book of Conservation and More Potatoes!

8. Look at the chart "What We Get From Forest Land" from the U. S. Forest Service. (in pack)

LESSON 10

CONCEPT: Man uses the earth's resources for enjoyment and recreation

MATERIALS:
1. pictures of recreational activities: picnicking, swimming, mountain climbing skiing
2. picture of children swimming
3. tape recorder

PROCEDURE:
1. Gather the children into a group and hold up the picture of children swimming. Ask questions about man's utilization of natural resources for fun.

   Which of the earth's natural resources do these children use for fun and sport?

   Hold up the pictures of picnicking, skiing and mountain climbing. Inquire as to how man uses other natural resources for fun.

   What other natural resources can people use for fun? How do you and your family have fun outdoors?

2. Ask who would like to tell, on the tape recorder, how they have had fun in the outdoors, using the earth's natural resources. (This is an important skill for first graders to acquire. It requires discipline of their thoughts and organization of their thoughts into verbal expression on such a specific topic).

EVALUATIVE ACTIVITY: After the children have adequately discussed and become acquainted with how we enjoy our earth, ask who would like to put on a little pantomime "play" that would show these activities. The "play" could be presented by one individual or a small group depending on the activity demonstrated.

The "audience" would have to quietly observe what is happening and afterwards raise their hands to guess what it is that the child or group is doing.

SUGGESTED ADDITIONAL ACTIVITIES:
1. The children may use different art media to make posters for the room showing recreational activities in the outdoors.
2. Watch the film Families and Recreation: Fun is for Everyone
3. Study about special places in the world that are famous for their natural beauty and the activities surrounding them.

4. Look at a map of Washington. Find all the National Forests. Read about them in the book Discover--The National Forests of Washington.

5. Write to the National Forest Service to request information on conservation and enjoyment of the natural resources.

6. Read the books: Barney Beagle Goes Camping by Jean Bithell, Night Outdoors by Naomi Buckheimer, and Danny On the Lookout by Leonard Shortall.

7. Play "I'm going on a vacation.....", "I'm going to .....", "I'm taking ....."

For your convenience the films used in this ELE are listed on this tear out sheet. Simply add the dates required and mail to the Instructional Material Center, ERAC.

Project ECOLogy

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